

K78-21

ВОДООХЛАЖДАЕМЫЕ ПОЛИПРОПИЛЕНОВЫЕ КОНДЕНСАТОРЫ

WATER COOLED POLYPROPYLENE FILM CAPACITORS

Технические условия: РАЯЦ.673635.002ТУ

Specifications: РАЯЦ.673635.002ТУ

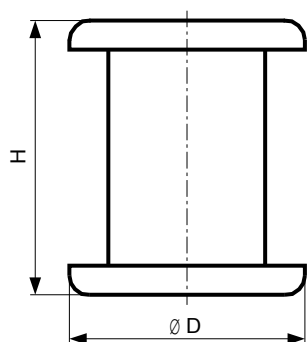
Предназначены для работы в цепях переменного тока, в частности, для компенсации реактивной мощности.

Designed to operate in AC current circuits and specifically for compensation of reactive power.

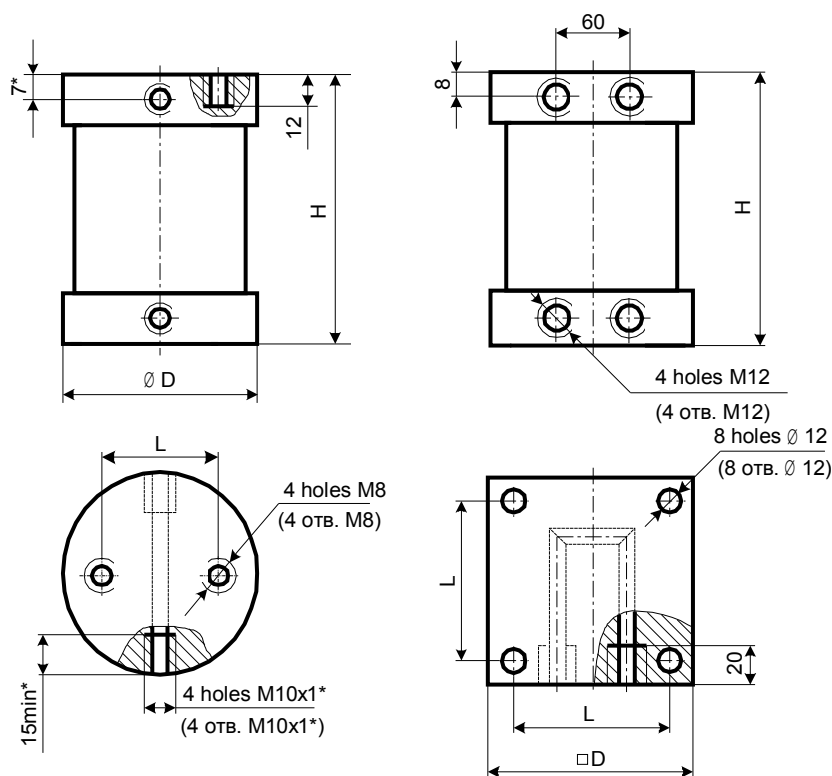
Конструкция: в цилиндрической полимерной оболочке с металлическими фланцами. Могут поставляться в сборе с охладителями (K78-21A).

Design: cylindrical housing made of polymeric materials with metallic flanges. Can be delivered with coolers (K78-21A).

K78-21



K78-21A



*Размеры определяются по согласованию с заказчиком

Исполнение 1
Design 1

Исполнение 2
Design 2

| | | | |
|---|---------------------------|--|---------------------------|
| Номинальная емкость | 0,1 ... 68 мкФ | Rated capacitance | 0.1 ... 68 μ F |
| Номинальное напряжение | 250...1000 Вэфф | Rated voltage | 250...1000 Vrms |
| Допускаемое отклонение емкости | $\pm 5; \pm 10; \pm 20$ % | Capacitance tolerance | $\pm 5; \pm 10; \pm 20$ % |
| Тангенс угла потерь при $f = 1$ кГц | $\leq 0,0005$ | Dissipation factor at $f = 1$ kHz | ≤ 0.0005 |
| Интервал рабочих температур (обеспечивается принудительным охлаждением) | +1 ... +55°C | Operating temperature range (obtained by the use of forced or water cooling) | +1 ... +55°C |
| Температура охлаждающей воды | $\leq 20^\circ\text{C}$ | | |
| Расход охлаждающей воды | $\geq 1,5$ л/мин | | |
| Наработка | 25000 ч | Operating time | 25000 hours |

Обозначение при заказе:

Конденсатор K78-21 - 250 В - 1,0мкФ $\pm 10\%$

Ordering example:

Capacitor K78-21 - 250 V - 1.0 μ F $\pm 10\%$

| Ur, Vrms | Cr, μ F | Реактивная мощность Reactive power Qr, kVAr | Размеры, масса Dimensions, mass | | | | | | | | |
|----------|-------------|---|--|---------|--------------|---|----------|---------|----------|-------------|------|
| | | | K78-21 (без охладителей) (without coolers) | | | K78-21A (с охладителями) (with coolers) | | | | | |
| | | | D, mm | H, mm | Масса, g max | Исполнение Design | D, mm | H, mm | L, mm | Mass, g max | |
| 250 | 0.22 | 85 | 32±1.95 | 32±1.95 | 40 | 1 | 36±1.95 | 63±2.3 | 21±1.65 | 160 | |
| | 0.33 | 110 | 42±1.95 | | 70 | | 45±1.95 | | | 240 | |
| | 0.47 | 125 | 45±1.95 | | 80 | | 50±1.95 | | | 280 | |
| | 0.68 | 150 | 52±2.3 | | 100 | | 56±2.3 | | | 350 | |
| | 1 | 175 | 58±2.3 | | 120 | | 63±2.3 | | | 520 | |
| | 2.2 | 250 | 88±2.7 | | 280 | | 90±2.7 | | | 1100 | |
| | 3.3 | 130 | 58±2.3 | 82±2.7 | 310 | | 63±2.3 | 120±2.7 | 30±1.65 | 920 | |
| | 3.9 | 155 | | | 420 | | 71±2.3 | | | 1000 | |
| | 4.7 | 175 | | | 67±2.3 | | 90±2.7 | | | 1500 | |
| | 6.8 | 230 | | | 85±2.7 | | 100±2.7 | | | 1700 | |
| | 10 | 275 | | | 95±2.7 | | 1800 | | | 122±3.15 | 4400 |
| | 22 | 650 | | | 140±3.15 | | 2 | | | 150±3.15 | 4400 |
| 350 | 0.22 | 27 | | | | 1 | 32±1.95 | 63±2.3 | 21±1.65 | 140 | |
| | 0.33 | 40 | | | | | 36±1.95 | | | 160 | |
| | 0.47 | 55 | | | | | 45±1.95 | | | 240 | |
| | 0.68 | 75 | | | | | 56±2.3 | | | 350 | |
| | 1 | 110 | | | | | 80±2.3 | | | 830 | |
| | 2.2 | 225 | | | | | 71±2.3 | | | 1000 | |
| | 3.9 | 205 | | | | | 80±2.3 | 1300 | | | |
| | 4.7 | 240 | | | | | 80±2.3 | 2600 | | | |
| | 10 | 330 | | | | | 110±2.7 | 3700 | | | |
| | 22 | 255 | | | | | 120±2.7 | 4400 | | | |
| | 33 | 585 | | | | | 150±3.15 | 2 | 100±2.7 | 5300 | |
| | 47 | 760 | | | | | | | 120±2.7 | 5300 | |
| 68 | 630 | 160±3.15 | | | | | | | | | |
| 500 | 0.1 | 35 | | | | 1 | 32±1.95 | 63±2.3 | 21±1.65 | 140 | |
| | 0.22 | 70 | | | | | 45±1.95 | | | 240 | |
| | 0.33 | 100 | | | | | 63±2.3 | | | 520 | |
| | 0.68 | 190 | | | | | 71±2.3 | | | 700 | |
| | 1 | 260 | | | | | 80±2.3 | | | 1000 | |
| | 2.2 | 300 | | | | | 100±2.7 | | | 1100 | |
| | 3.3 | 420 | | | | | 80±2.3 | 1200 | | | |
| | 3.9 | 280 | | | | | 90±2.7 | 1300 | | | |
| | 4.7 | 330 | | | | | 100±2.7 | 1400 | | | |
| | 6.8 | 450 | | | | | 120±2.7 | 2600 | | | |
| | 10 | 740 | | | | | 150±3.15 | 2 | 120±2.7 | 4400 | |
| | 22 | 900 | | | | | | | 160±3.15 | 5300 | |
| 33 | 725 | | | | | | | | | | |
| 47 | 810 | | | | | | | | | | |
| 800 | 0.1 | 55 | | | | 1 | 32±1.95 | 100±2.7 | 21±1.65 | 620 | |
| | 0.22 | 105 | | | | | 45±1.95 | | | 700 | |
| | 0.33 | 150 | | | | | 50±1.95 | | | 720 | |
| | 0.47 | 205 | | | | | 56±2.3 | | | 770 | |
| | 1 | 385 | | | | | 80±2.3 | | | 1200 | |
| | 2.2 | 710 | | | | | 110±2.7 | | | 1700 | |
| | 3.3 | 610 | | | | | | 2000 | | | |
| | 4.7 | 1000 | | | | | 120±2.7 | 2900 | | | |
| | 6.8 | 1400 | | | | | 150±3.15 | 2 | 100±2.7 | 4400 | |
| | 10 | 1090 | | | | | | | 160±3.15 | 5300 | |
| 1000 | 0.1 | 85 | | | | 1 | 36±1.95 | 100±2.7 | 21±1.65 | 640 | |
| | 0.22 | 175 | | | | | 50±1.95 | | | 720 | |
| | 0.33 | 240 | | | | | 56±2.3 | | | 770 | |
| | 0.47 | 320 | | | | | 63±2.3 | | | 830 | |
| | 1 | 585 | | | | | 90±2.7 | | | 1300 | |
| | 2.2 | 665 | | | | | 100±2.7 | | | 1700 | |
| | 3.3 | 1280 | | | | | 120±2.7 | 2900 | | | |
| | 4.7 | 1620 | | | | | 150±3.15 | 2 | 100±2.7 | 4400 | |
| | 6.8 | 1240 | | | | | | | 160±3.15 | 5300 | |

Допустимые значения напряжения в зависимости от частоты определяются соотношением:
Permissible Urms is expressed by

$$2\pi U^2 f C (3 \cdot 10^{-4} R_t + 2\pi f C R_e R_t + 2f C K_p) < A,$$

где A = 12 для Ur = 250В, A = 38 для остальных номиналов.

where A = 12 for Ur = 250V, A = 38 for Ur > 250V

| Ur, V | Cr, µF | Re, 10 ⁻⁴ | Rt | Kp, 10 ⁻⁴ |
|-------|--------|----------------------|-------|----------------------|
| 250 | 0.22 | 0 | 0.402 | 0 |
| | 0.33 | | 0.305 | |
| | 0.47 | | 0.255 | |
| | 0.68 | | 0.214 | |
| | 1 | | 0.180 | |
| | 2.2 | | 0.117 | |
| | 3.3 | | 0.250 | |
| | 3.9 | | 0.236 | |
| | 4.7 | | 0.204 | |
| | 6.8 | | 0.154 | |
| | 10 | | 0.127 | |
| 22 | 0.047 | | | |
| 350 | 0.22 | 8.95 | 0.385 | 177.00 |
| | 0.33 | 5.96 | 0.323 | 82.14 |
| | 0.47 | 4.18 | 0.253 | 41.66 |
| | 0.68 | 2.89 | 0.238 | 20.33 |
| | 1 | 1.97 | 0.187 | 9.55 |
| | 2.2 | 0.89 | 0.125 | 2.01 |
| | 3.9 | 1.39 | 0.144 | 2.15 |
| | 4.7 | 1.15 | 0.127 | 1.48 |
| | 10 | 0.62 | 0.090 | 0.43 |
| | 22 | 0.81 | 0.048 | 0.27 |
| | 33 | 0.54 | 0.036 | 0.12 |
| | 47 | 0.73 | 0.037 | 0.11 |
| | 68 | 1.33 | 0.042 | 0.15 |
| 500 | 0.1 | 11.80 | 0.416 | 234.91 |
| | 0.22 | 5.36 | 0.267 | 52.41 |
| | 0.33 | 3.57 | 0.247 | 23.82 |
| | 0.68 | 1.73 | 0.167 | 5.74 |
| | 1 | 1.18 | 0.143 | 2.68 |
| | 2.2 | 1.47 | 0.130 | 1.86 |
| | 3.3 | 0.98 | 0.102 | 0.83 |
| | 3.9 | 2.65 | 0.140 | 2.16 |
| | 4.7 | 2.20 | 0.123 | 1.49 |
| | 6.8 | 1.52 | 0.106 | 0.71 |
| | 10 | 1.03 | 0.050 | 0.33 |
| | 22 | 0.97 | 0.040 | 0.15 |
| | 33 | 1.67 | 0.045 | 0.18 |
| 47 | 1.47 | 0.043 | 0.16 | |
| 800 | 0.1 | 23.50 | 0.514 | 187.06 |
| | 0.22 | 10.68 | 0.314 | 41.40 |
| | 0.33 | 7.12 | 0.258 | 18.77 |
| | 0.47 | 5.00 | 0.217 | 9.37 |
| | 1 | 2.35 | 0.140 | 2.10 |
| | 2.2 | 1.07 | 0.095 | 0.44 |
| | 3.3 | 1.71 | 0.100 | 0.54 |
| | 4.7 | 1.20 | 0.052 | 0.27 |
| | 6.8 | 0.83 | 0.039 | 0.13 |
| | 10 | 1.64 | 0.046 | 0.19 |
| 1000 | 0.1 | 16.59 | 0.421 | 96.68 |
| | 0.22 | 7.54 | 0.262 | 21.00 |
| | 0.33 | 5.03 | 0.217 | 9.47 |
| | 0.47 | 3.53 | 0.183 | 4.71 |
| | 1 | 1.66 | 0.120 | 1.05 |
| | 2.2 | 1.82 | 0.109 | 0.60 |
| | 3.3 | 1.21 | 0.043 | 0.27 |
| | 4.7 | 0.85 | 0.039 | 0.13 |
| 6.8 | 1.71 | 0.046 | 0.21 | |